Core Sulphur #9

March 13

David J. Ayres

admitted April 7th 1819

Sne

Chem

An

Inaugural Dissertation

on the

Chemical and Medicinal properties

of

Sulphur.

The following Essay was written under several disadvantages, and some apology may be deemed necessary for the hasty manner in which it has been thrown together and submitted to examination. I shall waive the stale excuses usual on these occasions of youth and inexperience, of being a tyro in medicine &c as the object which prompted this attempt is sufficiently explanatory of those circumstances. But it may be proper to remark that a subject so varieg[illegible] as the one which I have here selected, would necessarily be more extensive and therefore more liable to defects, arising from want of system than one of a most strictly practical nature. To this I may add that want of health during the most important time, prevented its being completed as early or as satisfactorily to myself as was [illegible] It is now however respectfully submitted, and its numerous imperfections, it is trusted, will receive that indulgence which might be expected, from the liberal and more enlarged [illegible] of its enlightened inspectors.

Introduction.

The Materia Medica in its present state, exhibits such an extensive variety of remedies for the management of diseases, that an attempt to introduce into notice any new article, would appear superfluous, unless it were possessed of very superior powers.

There are already in use, many medicines which might probably be dispensed with. But there are doubtless others, whose properties are not perhaps sufficiently appreciated, though long known as medicines, and which might admit of more extensive application.

Of this latter description, there is one, at present but little regarded in regular practice; and which, though apparently mild in its operation, and not in some respects intelligible, exhibits sometimes results equally salutary with those of the most active or powerful agents. The article to which I allude, and which has been selected as the subject of the following observations, is **Sulphur.**

In investigating the properties of this medicine it is not my object to attribute to it any new virtues, but

principally to
to illustra
attention, a

acid, and th
to consider,

The
of sulphur
Secondly,
to its value
thirdly
properties
and las

with some ge
its employ

principally to endeavor, by enlarging the sphere of its application, to illustrate its importance, satisfied, that it deserves more attention, than it now generally receives.

To prosecute the subject with that degree of regularity, and that regard to system which is desirable, I propose to consider, in the first place,

The Natural History and Chemical Properties of Sulphur.

Secondly, To offer some preliminary Observations relative to its value as a medicine.

thirdly, Its Modus operandi and Medicinal properties.

and lastly, to consider

Its application to Diseases, together with some general principles to be observed in regulating its employment.

may a p
Vegetable,
of Volcan
sublimed p
town Calle
Sulphur i
to get is
found Com
under vare
proc of
ined with
proportion
Oil Sph
a pale yel
little insiba
composed of S

Natural history &c

Sulphur is found in most parts of the World, and may be procured in greater or less quantity from Mineral, Vegetable, and Animal Substances. But it is chiefly the product of Volcanoes, and is also dug out Mines in Germany; or sublimed from Sulphurous grounds in Italy, near a small town called Sulphatara whence its name originated. Sulphur is seldom found in nature, in a pure unmixed state. So great is its affinity for other substances, that it is almost always found combined with some of them. It is united with metals under various forms, from which it may be separated by the process of roasting. It exists, in many mineral waters combined with Hydrogen, and some vegetables yield it in considerable proportions, especially those of the cruciforme tribe.

Sulphur is a solid, opaque, combustible substance, of a pale yellow colour; insoluble in water, very brittle; with little sensible taste, and a peculiar smell when heated. It is composed of small and ill defined crystals. Its specific gravity

(a) American Dispensatory — by Dr. Coxe.

(x) Henrys Chemistry

is stated at 1.990 or nearly twice as heavy as water. When grasped in the hand it makes a crackling noise and sometimes breaks, owing probably to the expansive power of heat and its great fragibilite. It acquires by friction resinous electricity. It is fusible at 220° of Farenheits thermometer; burns with a pale blue flame at 302° and with a bright white flame at 5,000°.(a) and it is capable of combining with different proportions of Oxygen.

When Sulphur is fused, if the heat be rapidly increased it loses its fluidity at 350° and becomes firm and of a higher color. If the temperature be reduced it regains its fluidity; this may be alternately repeated in close glass vessels, if the changes of heat be not slow, otherwise it is volatalized. It sublimes at 600°.

Sulphur after being melted, & suffered to cool, congeals into a crystaline form: but so irregularly that its crystals cannot be traced, farther than that they are slender interlaced fibres.

If Sulphur be kept in fusion in atmospheric air, it absorbs a small quantity of oxygen and forms an Oxyde of Sulphur. This when poured into water forms a soft red less substance resembling like wax, which has been used to take off impressions from medallions. These impressions are hard when the Sulphur becomes

cold

[illegible] Cox's theory

acid. It is then of a specific gravity of 1.325 having considerably increased in weight.[a]

If Sulphur be heated in atmospheric air sufficiently to take fire it burns with a pale blue flame, absorbing oxygen from the air and is converted into sulphurous acid. When set on fire in pure oxygen it absorbs its maximum of this gas, burning with a brilliant light and sulphuric acid is the product. To form the acid however it is necessary to make the experiment over water.

The sulphur of commerce is met with under two forms. The first is of a compact cylindrical shape, so formed by being cast into moulds, and is called the rolled brimstone. The other a light powder prepared from the first by sublimation in close vessels is called Flowers of Sulphur. The latter is generally the purest, but the two varieties are readily convertible into each other by the modified application of heat.)

Hitherto Sulphur has been deemed a simple substance. But the suggestions of M. Berthollet have rendered it probable that hydrogen enters into its composition. The late experiments of Mr. Davy tend to confirm this opinion. On submitting it to the action of a

a vide Henrys Chemistry — also note by Dr Coxe.

Voltaic galvanic battery we observe that the negative wire gave not Hydrogen and the existence of Hydrogen in Sulphur was rendered still more probable by his observing that a small quantity of water was also produced during the combustion. It is not however doubtful, whether the Hydrogen in Sulphur is any thing more than an accidental ingredient.(a) But this ultimate nature is not the object of present enquiry.

Sulphur is the base of a great variety of compounds, many of which constitute the most powerful agents in Chemistry and Medicine. United, as has been noticed, with its full proportion of Oxygen it forms **Sulphuric acid**, and the compounds of this acid with the alkalies and earths called **Sulphates**. Among these last are found some most useful cathartic medicines, as that formed with Magnesia called also Epsom Salt, and with Soda the Glauber Salt &c.

United with a less proportion of Oxygen it composes **Sulphurous acid** and the compounds of this acid with the alkalies & earths called **Sulphites**. The latter when exposed to the air in solution, absorb oxygen and are converted into Sulphates.

Sulphur when united with the alkalies or earths by fusion and the intervention of the acid forms the binary compounds called

x Debes. of La Grange

called Sulphurets or Sulphurets of Sulphur. These are formed of a protoxide of alkalies. They also decompose water and become partially converted into Sulphates by that process. They have also the property of decomposing metallic oxyds and of reducing or revivifying them to metallic state.

In combination with Hydrogen it forms the Sulphurelled Hydrogen and the compounds with alkaline and earthy bases called Hydro Sulphurets. In its union with these bases Sulphurelled Hydrogen appears to perform the part of an acid and presents an exception to the doctrine of acidification. The Hydro Sulphurets by exposure to air absorb oxygen and become Sulphites, which at length by further oxygenation are converted into Sulphates.

Sulphur unites ~~with~~ in a still farther proportion with Hydrogen, forms the Supersulphurelled Hydrogen and its compounds with different bases called Hydrosupersulphurets or Supersulphurelled Hydro Sulphurets. These when heated, exhale Supersulphurelled Hydrogen gas and the residue consists of Sulphur.

Sulphur may also be detected in a chemically united state with alcohol when both are in a state of vapour forming the Sulphuret of Carbon or Alcohol of Sulphur. This compound in its vapor

* [illegible] Chemical Dictionary.

has no the greatest degree of affinity with the known metals.
The compound of Carbon combined by Berzelius to consist of
uniting with alkaline & earthy bases forming Carbo Sulphurets
the properties of which however have not been investigated.

Oil of Turpentine and other essential oils dissolve a
considerable proportion of Sulphur when hot the excess part of which
may be deposited in Crystals when cooled slowly. The fixed or expressed
oils, fatty oils, also unite with it by boiling and acquire a
deep yellowish brown colour and a strong fœtid odour. This combination is termed the Balsam of Sulphur, which also separates
crystals by long keeping.*

The order of affinities of Sulphur according to Bergman
is as follows, — Fixed Alkali, Iron, Copper, Tin, Lead,
Silver, Bismuth, Antimony, Mercury, Arsenic, and Molybdena.

Of the prepared Sulphur there are two forms
used in Medicine — the Sublimed or Flowers of Sulphur;
and the Sulphur Precipitatum, or as it is the Lac
Sulphuris magistery of Sulphur &c.

The Sublimed Sulphur is prepared by condensing the vapour

(a) . Allin Chem. Dictⁿ

x Henrys Chemistry

or melted sulphur into large vessels or chambers. It concretes in the form of a yellow powder which when examined by a microscope appears to be composed of minute crystals.[a] What remains is called Sulphur Vivum. In this manner Sulphur is first purified and its purification is completed by boiling it repeatedly in distilled water. Then twice or thrice its weight of Nitro muriatic acid dilated with a part of distilled water is used, finally washing it with distilled water till this comes off tasteless, and incapable of changing the blue colours of vegetables.[+] To purify the flowers of Sulphur from arsenic with sulphurous acid a small quantity of which is generally present after the process of sublimation, it is also directed to wash the powder first with a warm mix. by dilute solution of Pearl ash and then with two or three successive portions of warm water.

The Lac Sulphuris is prepared by decomposing with the Sulphuric or other acid a Solution of Alkaline Sulphuret. A copious white precipitate falls down, which is to be thoroughly edulcorated by successive portions of warm water. Sulphur in this state has a dull earthy appearance owing, as it is said to its being in a minute state of division. It is of a yellowish white colour,

× vide Ure's Chem. Dictty.

(1) Sulphur Sublimatum Lotum — or washed Flowers of Sulph.

smooth and almost unctuous to the touch. By exposure to light it acquires a yellow colour. This is thought to be the purest kind.

These two forms of purified Sulphur are both used in medicine. There is little difference between them, but it is the former as being the most common to which I shall confine my remarks.

Having now given a general outline of the Chemical history and properties of Sulphur with the mode of preparing it for medical use, we shall next proceed to the second division of our subject which consists chiefly of Observations relative to the importance of Sulphur as a medicine.

Preliminary observations &c.

As an article of medicine Sulphur has long been in use and the high expectations formerly entertained of its powers are owing perhaps in many instances to its indiscriminate employment. So great indeed appears to have been the confidence placed in it on some occasions that it was exerted, as if by a magical

[illegible] of the most trivial and obstinate diseases. Hence it was [illegible] without [illegible] those circumstances which in [illegible] return practice, would suggest the propriety or impropriety in its administration. The numerous disappointments that it met from its former mode of employment occasioned it [illegible] to cease [illegible] until it had shared the fate of many other remedies and nearly ceased to be regarded as a medicine. To indiscriminate employment may perhaps be added as another cause of its neglect, the great abundance with which it became to be procured and the consequent rejection of its [illegible] by which it became to cease to receive particular attention as a medicine. A disposition to be attracted by novelties is a common to human nature; that in every age an overplus from articles which were most common or abundant however valuable have been least regarded. The natives of South America for example, would formerly have exchanged masses of gold, because he had it in abundance and knew not its value, for the most insignificant toy which excited his attention only on account of its novelty or the difficulty with which it was obtained.

For a considerable time the medicine appeared to have sunk almost

[illegible] a date of [illegible] [illegible] [illegible]

as of the most active and powerful description. "It is entirely [illegible] a great number of her operations. She presents it under various forms as an aqueous charge, with the waters denominated Calcareous, [illegible] charge, with the metals causes it to pass into the vegetable and animal kingdoms, and receives it at Chemists under an infinite number of combinations." It is presumable therefore that so powerful a chemical agent may also be found equally efficacious as a medicine, in excessive losses in the animal economy which heretofore have been passed unobserved or have not been sufficiently appreciated. Having premised these remarks we shall next consider the Modes of Medicinal Discovery of Galbanum, to its practical application.

Modes of Operations &c

In the action of the system Galbanum always performs the part of a Depletion or Sedative & Tonic and in some degree of a Diuretic. But other medicines have been exhibited which are stated in after mention. Given in doses of ℥j & ℥ij it generally induces an evacuation from the bowels by gentle stimulation and increasing

a. From the general effects which Sulphur appears to display on the system it is reasonable to suppose that it promotes absorption by increasing the tonic powers of the lymphatics.

their peristaltic motion. As a purge it acts chiefly on the great intestines, though it appears also to leave a tonic impression on the whole course of the alimentary canal, and after its operation leaves a laxative tendency without inducing that sort of debility which succeeds to habitual [illegible] or costiveness. At the same time that it operates on the bowels, it promotes gentle diaphoresis, by relaxing the surface and increasing the action of the cutaneous vessels. The pulse is rendered by it fuller and more voluminous or open. It appears to diminish the normal quantity of urine which it must do either on the principle of revulsion, or by increasing the power of the absorbent system. The other secretions seem to be increased. It also leaves a tonic impression on the stomach, by which the appetite and digestive are increased and the whole system invigorated."

Although as a Laxative Sulphur is in general mild in its operation, its effects are sometimes harsh and distressing. A case of Idiosyncrasy do sometimes occur, where it produces painful [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] cases, a loss of the [illegible]. These effects however are in most cases attributable to the impurity of the medicine [illegible]

a) [illegible] Theorem by Dr Chapman.

[illegible] in combination [illegible] and [illegible] with the oxygen of the atmosphere if [illegible] not [illegible] excluded forming sulphurous acid. It is [illegible] to be destroyed by repeated ablution and the washed [illegible] of sulphur only used internally.

The Modus Operandi of Sulphur viz. that of other medicines which induce perspiration is still a subject of discussion. I will merely observe that there are existing opinions which may be briefly [illegible]. According to one it produces its effects by entering the circulation and operating on the fluids of the body altering or correcting their vitiated condition. The other supposes it to act by exciting a primary local impression on the stomach which is conveyed through the medium of sympathy to other parts of the body; or that if it enters the circulation it is not in its ~~assimilated~~ position or Chyle in an assimilated state.

In favour of the former opinion it is urged that sulphur may be detected passing through the surface after its internal use, and that therefore it must have previously entered the circulation. This opinion is maintained by Dr Cox who after observing that Sulphur is operative as a [illegible] and promotes the insensible perspiration, then proceeds "it seems to pass through the whole habit and manifestly transpires through the

× vide Appendix Dispensatory.

(*) vide Note to Letter [illegible].

pores of the skin, as appears from the sulphurous smell of persons who are taken it, and from silver being stained in their pockets of a black ish colour which is the known effect of sulphurous fumes."

In favor of the latter opinion it is maintained that it has never been found in the circulation in its crude or normal state, that the blood being fully elaborated fluid whatever is wanting, and it is indeed homogeneous, the decomposition of the iodials, and no change in its taste, odour, or other properties. It that when a substance of the kind is perceptible in the secretions and excretions of the body, it had been received after being permitted to act uncontrolled by the powers of assimilation. It, thing that "Soda and potash, on sinking by combustion from plants which contain nothing but the raw materials out of which these articles are made, but combustion they cannot be obtained although substantially present in the plants."*"

Whether in its operation as a diaphoretic, it either does enter the circulation, and, as it by alter the condition of the blood; or whether its effects are exclusively the consequence of sympathy by which a primary impression on the stomach is transmitted to the skin &c., they leave to refer to the decision of those whose superior talents and more extensive research enable them better qualified than myself to answer

"Provocat autem interna usu transpirationem insensibilem, mucis exclusione ipsum excretionem vermes necandi [illegible] quo in gaudens."

[illegible]

answer to the whole question.

Having thus made these remarks on the modus operandi of Helfrich which to him may have been evidence enough to give a bias of the opinions and leaning on the subject, I now proceed to the consideration of its Medicinal properties. Formerly our medicine had a considerable variety of properties ascribed to it and with perhaps some exceptions the reader long since entertained of its effects will be found for the most part correct although its application may not have been founded on such principles as would be approved of in modern practice.

In the Apparatus Medicaminum of Murray Helbhus is mentioned as possessing not only the properties of a Laxative and Diaphoretic but also as an Anthelmintic or Vermifuge and an Expectorant[a]; useful in those diseases originating from suppressed expiration in consequence of a warm climate, and for the purpose of expectoration. It is also stated to be a warm aromatic. [illegible] observed in expiration, [illegible] complaint is [illegible] the [illegible] the [illegible] It either does no [illegible] or [illegible] respect. The same writer [illegible] Helbhus [illegible] in the disease of the [illegible] in those [illegible] suppressed expiration. It remains [illegible] when

x In the same work, also recommended the Balsam ex Sulphur cum Terebinthina or Balsam of Sulphur with oil of Turpentine in all diseases of the Breast and likewise for all ulcerations & obstructions of the urinary passages. It is the only preparation of Sulphur that I know of which operates as a Diuretic. The dose is 10 to 15 or 20 drops in water.

Might not this be useful in some Dropsical cases? Dropsy?

[illegible] the [illegible] of the diseases of the breast; [illegible] on the [illegible] of Blood [illegible] [illegible] in [illegible] [illegible] ?

[illegible] action is an important [illegible] [illegible] [illegible] in affections of the breast great confidence was [illegible] in its powers. [illegible] [illegible] [illegible] it was [illegible] by Hernaeus as the "[illegible] remedy" in consumption and in ulcerations of the Lungs. But [illegible] to [illegible] in certain [illegible] [illegible] more likely to loose [illegible] than to be of much service.

In an [illegible] work in Duncan's Dispensatory the following properties are [illegible] to the flowers of [illegible]. "They are used in the diseases of the breast, [illegible] in [illegible] disorders both internally and externally. They are certainly both balsamic in [illegible] and it is their [illegible] which lessens their [illegible]. [illegible] [illegible] is mineral [illegible] very effectual in lowering a [illegible] and [illegible] the [illegible] Mercury by those particular glands and also gives [illegible] [illegible] in those troubles with the [illegible] bowels." *

Murray in his Apparatus Medicaminum [illegible] of the use of Antimony [illegible] with the effects of several of the mineral poisons [illegible] the [illegible] of mercury on the urinary glands. It was [illegible] to counteract the effects of tartarized antimony and [illegible] on the stomach and intestines. A case

× a Nivier contre voisons à Charsenne [illegible] Ferrois et la place
a Paris [illegible]

[illegible] in which Fulthorp has been successfully used in a patient who was followed by [illegible] (under series)? Whether the medicine is entitled to the properties ascribed to it I am not prepared to assert or bring out [illegible] remark, that it merits the sanction of further authority to establish its utility in these cases.

I have stated of Fulthorp only a laxative but days it has the operation that [illegible] the bowels in the most exact without griping or bowels: nor are it [illegible] for the sake which sometimes allows it observation are [illegible] to be [illegible] thought [illegible] rather [illegible] one of most equable laxative that could be [illegible].

Dr Pereira in his Materia Medica speaks of Fulthorp as a laxative [illegible] and also speaks of its [illegible] in removing those painful spasmodic affections denominated "cramps", by wearing bags of Fulthorp on the part prone to such attacks much benefit has been experienced. A case is given in this work of a man who had been subject to cramps of the abdominal muscles, and who after having tried various remedies without success [illegible] by the use of this remedy. In [illegible] remedies properties of Fulthorp are the stickings exemplified in the [illegible] in preventing the attack, but in taking it off the stroke [illegible]. His [illegible] use for some weeks eventuate in a cure.

If Fulthorp should also appear is not as a Tonic it has been found in

of practice of Dr. Prescott is useful substitute in some anomalous cases where primary Tonics were inadmissible or had failed to do, or. In this use of this particular we shall hereafter have occasion to speak in the application of the mixture to Intermittent fever.

Having now considered the general effects of the Alkahest on the system, with the opinions of different authorities relative to its alleged medicinal properties we shall proceed to its practical application. Enough has been adduced to establish the opinion of its multifarious properties. Combining together those of an aperient or laxative diaphoretic & hydragogic Tonic and expectorant, it may unquestionably be used with advantage under proper circumstances, in a great variety of diseases. The most prominent cases which will next claim our attention together with some general principles to be observed in regulating its employment.

Practical application of Sulphur.

From the diversified properties of Sulphur we may naturally conclude that it is suited to a variety of indications, which are now to be considered in the order of the diseases which they [illegible] Indeed it is

[illegible] the external application of these properties which would [illegible] [illegible] [illegible] this [illegible]. The design is to select such cases [illegible] table to the [illegible] [illegible] our remarks into a small compass as perspicuity will permit.

In diseases of an inflammatory nature of high action which [illegible] in pure inflammations or active hepatitis Mercury [illegible] in the first [illegible] such as have already, nothing is obviously not adapted [illegible] [illegible] of these. But when of a lingering, protracted or Chronic character, it is a most useful medicine under a variety of circumstances.

Many of the diseases of the Alimentary Canal, properly so called, are of the utmost consideration & among these not the least common or troublesome.

Dyspepsia or Indigestion. This disease is of frequent occurrence and is sometimes difficult to manage. The subjects of its attack are mostly [illegible] and sedentary and those of feeble constitutional habits. The exciting causes are numerous and have been divided into Internal and External or such as act immediately on the Stomach and such as act on the Stomach through the medium of other parts of the body. Of the first of causes [illegible] enumerated [illegible], [illegible] food, improper articles of diet or drinks, the [illegible] use of tobacco, opium &c. The external causes of Dyspepsia are intense study, sedentary occupations, depression of spirits, [illegible]

[illegible] [illegible]. The symptoms of this disease are a want of appetite nausea and [illegible] transient distensions of the Stomach [illegible] eructations, [illegible] pains in the region of the Stomach costiveness &c the [illegible] however is not uniformly [illegible] [illegible] [illegible]. There are also several anomalous symptoms which sometimes attend this disease as vertigo, palpitation, dim vision &c. The proximate cause has been defined by Cullen to be a want of tone or weakened action of the muscular fibres of the Stomach. It is more probable however is that it consists in a depraved or vitiated action of [illegible], by which digestion is imperfectly carried on. But in [illegible] we consider it the medicine now under consideration [illegible].

In the Treatment of Dyspepsia the exciting causes are to be avoided and an emetic is generally wanted in the first stage, [illegible] the stomach [illegible] a strong impression. After which [illegible] purgatives and [illegible] are also [illegible]. [illegible] that [illegible] may be used with great advantage [illegible] from the [illegible] [illegible] we might expect it to [illegible]. It [illegible] the [illegible] [illegible] active [illegible] and greatly relieve the nausea and other distressing symptoms.

The Lac Sulphuris w[illegible] [illegible]ity [illegible] with Mag[illegible] [illegible] these [illegible], but there is little diffe[illegible] [illegible] between [illegible] preparation and the well prepared Washed Sulphur.

from the effects which follow the opposite use of Sulphur, it would seem also to act as an alterative changing imperceptibly the morbid state of the stomach, till it finally restores that organ to its natural tone in healthy persons. When there is much acidity, it has been advised to use it combined with magnesia. After has corrected the state of the stomach, the vegetable or mineral acids may safely resort to. But in the milder forms of the complaint after the evacuation of the stomach and bowels by an emetic or purgative, the use of Sulphur continued for some time would come be highly advantageous, both in the relief and for prevent the recurrence of the disease.

There another disease which appears closely allied to, and is probably a symptom of, Dyspepsia, called the Sick Headache which occurs periodically, and is often preceded by many of the symptoms of imperfect digestion above enumerated. The use of Sulphur combined with magnesia is an experiment which in this case also be highly advantageous after a few evacuations have been premised.

The use of Sulphur in Constipation is also alluded with much weight. This though not always productive of similar effects on different individuals is connected with and often an exciting cause of Dyspepsia. There are indeed some instances recorded of persons having had bowels,

[illegible] Dr Chapman. A case is also recorded by Haller of a person who had passed 70 years without an alvine discharge if my memory is correct — I have not the work at present to refer to.

months or even years without an evacuation from the bowels, and yet appear to suffer not little inconvenience from its interruption. In this habit of body is generally distinctive bad breath and offensive secretions when they are discharged. Whether we attribute this condition of the bowels to an evil with a morbid weakness or to a deficiency of bile or a vitiation of its qualities, the use of Calisaya would appear to be richly indicated, after previous evacuation by strong cathartics to relieve the bowels of inert or indurated fæces. The rationale of its operation would be to exert that irritative state of the bowels by promoting easy and regular evacuations and by pervading influence over the body, while however of increasing the secretions it would greatly tend to invigorate the action of the liver, obviate the deficiency of bile, and improve its condition. It might be given alone or with magnesia or Cremor Tartar, in doses of ½ or ¾ each once or twice a day, as the case might demand, to produce regular daily evacuations. To illustrate the facts with respect to constipation it may be necessary to remark, that most other purgatives by producing large evacuations occasion indirect debility of the intestines and a state of costiveness again ensues after their operation. But Calisaya on the contrary, by acting primarily on the

(2) Diagnosis morbi & materia medica

great debility, the mildness of its operation and probably also by the tonic impression which it imparts are very well calculated to counteract that disposition. "For habitual costiveness, the Nitre seems well adapted as it leaves a laxative tendency after its operation, without inducing that state of weakness which disposes to flatulence or eructations."[a] In these cases it is recommended to be sometimes combined with equal parts of Cream of Tartar in form of an electuary.

In Colic the use of Nitre has been attended in some instances with much benefit. I have known it prove highly efficacious in a gentleman who was subject to what may denominate Bilious Colic after an inflammatory remittent or bilious fever from which he did not for a long time recover his usual health. These attacks generally confined him several days and were accompanied with a yellowness of the eyes and skin cardialgia eructations indigestion, and a general derangement of the functions of the body. After a variety of treatment he was at length induced to resort to the use of Nitre whenever a slight pain with eructations and other premonitory signs of an approaching attack made their appearance; and the result was a complete eradication of the predisposition to those attacks and the restoration of health. It should not be omitted, that on several occasions a dose of the

Ether is taken before the pain became very severe, it was felt, very effectually as an anodyne, and its repeated use for several days gave to the convalescence a pain. It was his practice to use the medicine in doses of about ℥j twice a day until digestion was considerably restored, and by its repeated employment in this way this result became fully established.

Calomel was once considerably used in Dysentery. In the more violent forms of this disease I would not suppose it will be applied in our active treatment would be lamented. Yet as observed by Dr Parkinson "in Dysentery the chief obstacles which partakes of the character of the malignant or typhoid fever might perhaps be applied with advantage".

In Diarrhea much more benefit is to be expected the use of this medicine. Here however it is also proper to resort previously to the use of an emetic and one of the more active Cathartics, to evacuate thoroughly the alimentary canal. In that form of Diarrhea which succeeds an attack of measles I have been found a most useful remedy, as the history of my own case will serve to illustrate. In the year 1813 during a slow recovery from a violent attack of measles, I was seized with a Diarrhea accompanied with distressing tormina and tenesmus. The discharges from the bowels were staring and bloody as in Dysentery and the

disorder

in action & evacuate it, and sometimes in addition, there was also much pain and a slight lacceration about the perineum. The pain was as well as I can remember, more acute and frequent than natural there was also some febricula or inward fever and a general prostration of strength. At that time tho' not commenced the study of medicine and a course I knew nothing of the principles of practice; but it appeared to me a natural inference, that the affection of the bowels might be relieved by inducing a determination to the surface. I was therefore led to make the experiment. Having seen Sulphur considerably used I was some also limited of observing its effects and determined on giving it a trial. Accordingly after having premised a dose of the Sulphas Magnesiae to induce copious evacuation from the bowels I began the use of Sulphur in doses of about ℥ij three times a day substituting at the second time on thin barley diet. This remedy happily had the desired effect: a cessation of pain quickly ensued; the tormina and tenesmus insensibly ceased; a healthy appearance of natural stools took place, and in about three days complete relief ensued.) In this case the Sulphur appeared to perform the part not only of a Laxative & Diaphoretic, but also as an Antispasmodic and Tonic. It certainly proved an efficacious remedy, and exhibited in its effects the combined operation of each of these properties.

I have been informed from very respectable authority (c) of several cases of hemorrhoids being effectually relieved by pads of Sulphur worn on some adjacent part. In one of those cases the gentleman informed me that he had been subject to this disease many years, but that since his practice of wearing the sulphur pad in one of the pockets of his pantaloons, he was entirely freed from it.—

A roll of brimstone is sometimes used in place of the pad.

(c) As a preventative to Intermittents or to guard the system against a tendency to their attacks, the occasional use of the sulphur might be serviceable in miasmatic countries. It is known that the smell of sulphur may be perceived in the evacuations, some days after it has been taken. From the permanent impression therefore, which it appears to make on the system it is reasonable to suppose that its action would be sufficient to resist or prevent morbid impressions.

For the same reason, might it not be useful as a preventative, if medicines can act in that way, to the infection of typhus fever in crowded places?

From the action of Aconite on the great arteries & its tendency to allay the irritation of these parts, "it is most useful [illegible] in the second stage of Pleurisy [illegible] the most [illegible] of [illegible] this is to be taken internally or externally in the form of an embrocation."

In the case of Pulmonary Consumptives this medicine may take a high station. It appears to have been first used in this case by Dr Cullen in the incomplete fevers of Gallavin of the mass of people, who states that by giving xij of Aconite in brandy in hour doses the rate of pulse & the perspiration, it will be altogether prevented. He adds "this virtue is not first imputable to the brandy but on the contrary it is such as it provide equally beneficial when given in such dyspnoea any other liquid vehicle; and he observes that having lately seen many cases of inflammatory cynanche and fever cured by it he now believes the Aconite alone to be the efficient ingredient."

In the Hectic of Phthisis, it has been employed with great success by Dr Chapman, who observes that "few medicines more lower over the febrile condition especially when marked by the paroxysmal type than Aconite." The notable experience of Dr Physick with this medicine in hectical hemorrhage and

other

× vide Treatise, by Dr Bingham.

other Exanthematic diseases appears to be altogether in its favour.
I will now just tell what I have to say of the efficacy of Sulphur
in these cases. They seem to avoid the revolutions so many meds. It
following from Dr. Chapman. "It affords me pleasure to
be enabled to cite the authority of Dr. Physick in support of the
views of the probability of the medicine. Dr. Physick goes so far as to
state that in all fevers of an anomalous or equivocal character,
having a tendency to intermit, where from the state of the system
the ordinary tonics are inadmissible, he has experienced from
Sulphur the best effects. The use of the medicine he would even
extend to other Mercurial diseases (and above all to affections of the
nerves of the description, the propriety of doing which I have witnessed
in several cases in my own practice." It may now be
seen in what authority, and under what circumstances I recommend
the employment of this medicine. It is true, that in many instances
its influence on the system is not so apparent. But it is not to be
considered on this account less efficacious. How often do we see
medicines of the least perceptible activity, produce the most powerful
results! Such is the operation of Mercury when gradually administered
to produce Salivation. And the action of all tonic medicines

in giving strength to the system is not more perceptible.

In Remittent fever the application of Sulphur is not very apparent except during convalescence to regulate the state of the bowels and correct any anomalous symptoms which may occur.

In Typhus fever indications of a more active kind are required. But Sulphur might be usefully employed in those cases where gentle evacuations from the bowels are necessary, and from its tonic powers combined with its cathartic property it answer this indication without increasing the debility. It would also assist in determining to the surface by increasing the action of the cutaneous vessels, and aid in supporting the system as a gentle restorative.

In some of the milder forms of the late Winter epidemic where it assumed the pneumonic form, I have known it used with success conjoined with warm beverages. It appeared to do good in these cases by operating as a cathartic and a gently stimulating diaphoretic, while at the same time it quieted the Cough rendered expectoration more easy.

The use of Sulphur in Pestis or Plague is spoken of by some of the older writers. It appears to have been so highly esteemed by Dioscorides as to be thought almost a specific against the disease.

He

× Fumigations of [illegible] Halesius (in the "Gentlemans Magazine" for 1754) for destroying or preventing the contagion of Plague. Always apb. med.

Whether the internal use of Sulphur or the Sulphurous acid formed by fumigation are either desireable, in relieving or preventing the disease, is a question not for me to decide.

* It may be proper to observe that there is a preparation of Sulphur the Hepatized or Hydro-Sulphuret of ammonia, which is recommended by Dr Rollo as a remedy for Diabetes. — (vide note to Caldwell's [illegible])

This preparation is formed by the direct mixture of Sulphureted Hydrogen and Ammoniacal gases, in a tube refracted. or passing Sulphureted Hydrogen gas through a solution of Ammonia till the liquid assumes a yellow colour.

Cones Henry.

to acidic it be given with Vinegar). It is said also by Desardinieres that the Plague which prevailed in Hungary in 1746 was successfully treated by the use of this medicine. *

The utility of Sulphur in Dropsy is not obvious. But, a priori, I would suppose it serviceable in that state of the disease in which Diaphoretics are indicated. It would doubtless have some tendency to equalize the excitement, as well as to promote absorption, and assist in the reestablishment of health.

In Diabetes the use of Sulphur would appear to be more strongly indicated; whether the origin of the disease be referred to a derangement of the secretory organs of the urine, or to a vitiated or perverted condition of the digestive functions. Its known property of diverting action from the Kidneys to the Surface, would point out its utility under the first view; and the utility in Dyspepsia would render it applicable to the second. Nevertheless, I would not presume to propose it, any further than as an auxilliary remedy in that state, in which Diaphoretics and tonics are employed. *

In Rebelled Eruptions the use of Sulphur has been highly recommended; and in Asthma, Epilepsy and other Convulsive Diseases brought on in this way. To relieve the Epilepsy of Infants it is

[illegible] by Hoffman, Rosenbaum (and others) that the mother or [illegible] [illegible] [illegible]

[illegible] to be in opinion generally entertained that the disease [illegible]
[illegible] it is sensible that [illegible] in the alimentary canal [illegible] that
[illegible] either it arises from hereditary predisposition or from any irritation or [illegible] as
[illegible] increase the stomach is the organ primarily affected. [illegible] the view [illegible] the subject
[illegible] a mistaken [illegible] from [illegible] having been observed to [illegible] [illegible]
[illegible] with hypochondriasis or those symptoms which denote a [illegible] [illegible]
[illegible] condition of the stomach and bowels [illegible] [illegible] [illegible] [illegible]
[illegible] in [illegible] [illegible] the brain [illegible] [illegible] [illegible] the bowels
[illegible] costiveness: and which require the use of medicines [illegible] [illegible] state the
[illegible] the action of the stomach.

[illegible] the [illegible] forms of gout [illegible] the [illegible] and [illegible] [illegible] [illegible]
[illegible] proper [illegible] [illegible] the [illegible] is [illegible]. In this gout it
[illegible] seldom to be indicated in the forming stage of a paroxysm as well as
after its occurrence. The premonitory symptoms of an approaching attack are a
[illegible] numbness & coldness of the lower extremities and the body is affected
with lassitude and languor, and the functions of the stomach are [illegible] with a [illegible]
[illegible] costiveness, flatulence, and other symptoms of indigestion. As these
symptoms usually last several days before a paroxysm comes on they [illegible]
[illegible] the [illegible] of remedies, and were the use of the [illegible] [illegible] [illegible]
[illegible] [illegible]. It would be [illegible] [illegible] [illegible] costiveness [illegible] [illegible] [illegible]
time

in its most perfect [illegible] instances, we recognize the [illegible] [illegible] much [illegible] any other remedy, but to diminish the healthy action of the system [illegible] the attack. On the appearance of the paroxysm however [illegible] active course of treatment becomes necessary. Where the symptoms are [illegible] with inflammatory heat, a full pulse, [illegible] [illegible] habit bloodletting should be attended [illegible] active purging [illegible] a patient [illegible] to [illegible] [illegible] [illegible] [illegible]. When the system has been sufficiently reduced by the [illegible] [illegible] and the alimentary canal freed, [illegible] the use of [illegible] [illegible] with magnesia may be resorted to with advantage. [illegible] have been observed to go off with spontaneous diarrhoea [illegible] [illegible] [illegible] to meet the [illegible] [illegible] [illegible] the [illegible] [illegible] manner, [illegible] the [illegible] of [illegible] [illegible] combined with the use of [illegible] when they became necessary.

In the Chronic state of gout [illegible] [illegible] [illegible] [illegible] the system [illegible] [illegible] [illegible] essential. [illegible] [illegible] [illegible] [illegible] in the bowels [illegible] [illegible] [illegible] [illegible] flatulence &c. [illegible] therefore, [illegible] [illegible] [illegible] excitement, [illegible] restoration

"Essay on the true nature and the true method of Curating the Soul" London 1792.

[illegible] power [illegible] of [illegible] in the [illegible] if [illegible] [illegible] [illegible]

[illegible] it yet we are next to notice

Rheumatism. [illegible] diseases sometimes resemble each other so much that it requires a discriminating eye. The principal difference appears to be that gout often arises from hereditary predisposition, rheumatism not without some visible cause. In the former the joints are supposed to be the primary seat, in the latter, the affection seems more purely to be at the [illegible]. In the former also, the joints are more swollen than in the latter, so that by the former may be [illegible] by Dr Pitcairn a tendinous and the latter a cartilaginous disease. Rheumatism has moreover been supposed to attack a great part of the body, sometimes the alimentary tract; but not of a primary affection, in most cases the skeletal and articular structures remain unimpaired. The disease is often highly inflammatory yet it seems to be a disease of peculiar action and does not progress nor terminate like the phlegmonous inflammation. These forms are also points out in rheumatism the acute and chronic, acute and chronic. A treatment is used in the acute form of rheumatism is to begin with active evacuations and a regular treatment; the [illegible] plan, suffering little from the treatment to [illegible] and [illegible] in requiring a free and longer use of diaphoretics and more attention to

[illegible] the disease is [illegible]
[illegible] the use of [illegible] is [illegible]
[illegible] but to be good [illegible]
[illegible] in a [illegible] length of time.

[illegible] bowels. When Sarsaparilla and the other secretants have been liberally exhibited the Opium will come in admirably, [illegible] diaphoretics, and lastly alone to exterminate the disease.

In the Chronic form of Rheumatism it is not so strongly indicated than in the acute. There, in this form, often great irritability of the nervous system accompanied with prostration of muscular power. In this case, a blister, incisions having been previously made by an active purge, the use of Sulphur may be resorted to with great advantage to regulate the state of the bowels and equalize excitement; it also tends, as has been observed, to dispose a more healthy action throughout the skin, excites moderate diaphoresis and assists in sustaining degree of temperature.

In Rheumatalgia a low form of disease, arising from long protracted ill cured Rheumatism, the late Dr Reesh recommended the habitual use of Sulphur as an alterative.

In the Chronic state of Rheumatism attended with pain the motion is highly efficacious if Dr Chapman's observation "that in proportion as we employ it in his disease his confidence in its power is increased."

It has been advised to give it in such doses as to keep

the

[illegible] in a [illegible] condition [illegible] profuse perspiration. When [illegible] necessary to excite the bowels more actively, it may be [illegible] with Magnesia or Cream of Tartar. It may also be advantageously [illegible] with Stimulating Diaphoretics and Diuretics.

Through the kindness of my friend Mr [illegible] I was [illegible] resident Dentist in the Alms House who at my request [illegible] the [illegible] [illegible] that [illegible] [illegible] for its use: I am enabled to present the following Case as exhibiting some [illegible] [illegible] in a [illegible] form of Chronic Rheumatism.

Judith Wilson Aet 39 has been affected with Chronic Rheumatism for the last 15 months. She took cold in November 1817, [illegible] much affected with Pains in her limbs. She was [illegible] a more [illegible] [illegible] for three months. After a variety of treatment she underwent Salivation, which restored her feelings and during the last summer she [illegible] able to move about [illegible] with the assistance of Crutches. At the return of fall her complaint returned in [illegible] severity. Medical attention however was rendered her until she was committed into this house on Decr 29th 1818. Her symptoms at this time were Soreness and stiffness of the limbs pain in the back worse by [illegible] [illegible] weak frequent Diarrhoea. Her appetite pretty good; [illegible] menstruating [illegible]

very every 24 hours no swelling of the joints. After bringing it for several days with the Salts and the Ext. Colchic, she was put on the usual sulphur round of a [illegible]. Peruvian Bark was also ordered with it for several days, but nothing to give the Sulphur a fair trial, it was omitted. That medicine (sulphur) has not been persisted in many days, before she informed me, with a countenance expressive of much gratitude, that she felt strong enough to move her private. The urine was clear but sometimes affected her bowels, causing a trifling griping. On 12 or 13 days she requested that a pair of crutches should be procured, that she could try to walk and sit by the fire. Her first effort cost her considerable fatigue perhaps from the rigidity and want of tone in her muscular system. The Sulphur was then continued with occasional intermission, when the bowels became affected, (and has been the only medicine prescribed. She now (20th July,) walks, with very little assistance and her general health is much improved. There is still an almost continued moisture on the surface and the feet are become slower and fuller.

This case is very conclusive and is almost alone sufficient to establish the efficacy of sulphur as a medicine in chronic rheumatism. The severe

[illegible]

of the added [illegible] seems to confirm this opinion.

The efficacy of Cathartics in Chronic Rheumatism is not easily accounted for. The mere evacuation of feces above observed are to induce a curative tendency in the bowels and determine to the surface of the skin. But this hypothetical explanation is not sufficient to explain it clearly, as the same disease does not appear to attend on use of the drastic purgatives, then prolonged & given in a higher degree. The efficacy must therefore be owing to the combined operation of the two agents. It seems also to exert a peculiar action which is particularly apparent in this disease and in its probability, when its powers shall have been fully tested, it will be found as much a specific in Chronic Rheumatism as Peruvian Bark in Intermittent fever.[a]

Vomiting has been very commonly used in Rheumatism and appears to have been [illegible] when it does not appear to be a specific.

By the late Dr Rush's decision for the commencement of the first stage of Epilepsy, it is one which sometimes serves to cut off & prevent the occurrence of paroxysm

after

after the app
to all the du
said, is und
and generally
To man
ible. Of
laid. Its
known to requi
in the practic
the Sulphur
is said to have

time or the
conclude, to
ployment of
1. It is not adv
tive depletion
2. It should ne
when they ar
3. It is best a

after the appearance of some of the premonitory signs. In short, to all the diseases of the Muscular System, Sulphur may be said, in under proper circumstances, to be particularly adapted, and generally useful.

To many of the Cutaneous diseases Sulphur is also applicable. Of its employment as an External remedy little need be said. Its use as an External remedy in Psora is too well known to require observation. In Tinea Capitis it has proved in the practice of Dr. Chapman highly useful. An Ugument made of the Sulphur with Lard, and the addition of the Muriat Ammonia, is said to have been effectual, in Cases which had baffled other remedies.

Having now treated this subject as extensively, as time or the limits of an Essay will allow, it only remains before we conclude, to add a few general observations relative to the employment of the Medicine.

1. It is not adapted to diseases of high action, at least until after active depletion has been premised.

2. It should never be employed to the exclusion of more active remedies when they are indicated

3. It is best adapted to diseases of a Chronic Character (and those Cases,

where the Pe
and; and its
Emetic or
4. When by
intermitted
5 The more
to 3ij two or
then given a
properties, t
intention, a

Enough
assure the im
ner which it
cacy it is cert
account of its
couraged. If
the numerous
vended in
ery of the E
government, for

where the pulse and other functions are below the natural standard; and its employment should in general be preceded by an emetic or active purgative.

4. When by continued use it produces griping, it should be intermitted a few days.

5 The mode of its administration is generally in doses of from ʒj to ʒij two or three times a day, when given as a laxative. But when given as a diaphoretic or to obtain the benefit of its other properties, the quantity should be lessened. To answer the latter intention, about ʒj every third or fourth hour is perhaps sufficient.

Enough, it is presumed, has been said, to illustrate in some measure, the importance of Sulphur as a medicine; and the circumstances under which it may be most advantageously employed. As a popular remedy it is certainly well calculated to admit of extensive application, on account of its safety; and its use might with propriety be farther encouraged. It would, in many respects, be infinitely preferable, to the numerous Nostrums which have been prepared by empirics, and vended in such abundance throughout our country; to the injury of the Community; and the reproach of an enlightened Government, for legalizing such deceptions. To the attention of